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by

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BIOLOGICAL EVALUATION
DOUGLAS FIR BEETLE
BOISE NATIONAL FOREST, R-4
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INTRODUCTION

The Douglas fir beetle has and continues to be the most important pest of Douglas firs on the Boise National Forest. Severe, unseasonal winter rains followed by winds and heavy snows toppled thousands of firs during the winter 1964-1965. Subsequently, beetle populations developed to epidemic proportions causing wide-scale losses through 1970. Even though salvage logging of distressed trees was undertaken, infestations covered too large an area for logging to be an effective control.

In 1971 beetle populations started a natural decline in most areas of the Boise Forest. However, mortality continued along the South Fork Payette River, Middle Fork Payette River, and South Fork Boise River in 1973 (Parker, 1972). Causes for recent buildups cannot be tied to naturally occurring phenomena such as the blowdown or logging slash. It is assumed that buildups are occurring as normal attrition of overmature stands. A request for evaluation of the three problem areas was received in late July 1974. Due to time constraints and the extensive amount of aerial survey data on hand, it seemed far more practical to base this evaluation on current and past aerial survey records rather than to expend additional money and time gathering ground data.

TECHNICAL INFORMATION

Insect: Douglas fir beetle, Dendroctonus pseudotsugae Hopkins (Coleoptera:Scolydidae).

Host: Douglas fir Pseudotsuga menziesii (Mirb.).

Type of Damage: Killing of Douglas fir, Heaviest losses occurring in large d.b.h., overstory trees. Groups of dead trees ranging from 10 to 200 plus.

Extent of Outbreak: Losses occurring forest-wide with greater increases along the South and Middle Forks, Payette River, and South Fork Boise River from Pine to Featherville (Fig. 1).

Location: Emmett, Lowman, Mountain Home Ranger Districts, Boise National Forest, Idaho.

BIOLOGICAL INFORMATION

Currently, several areas of the Boise National Forest are undergoing a resurgence of beetle activity. Attack centers are characterized by overmature large d.b.h. overstory Douglas firs. Groups of attacked trees vary greatly from as few as three to 200 or more.

In the past, considerable discussion and field tests have centered around chemical control and salvage logging for beetle control. The problem of locating all current year attacks and treating them before adults emerge makes control impractical.

Infested trees often occur in varying sized and widely scattered groups not associated with previous mortality. Signs of attack such as boring dust are extremely difficult to see and attacks often occur only above 10 or more feet. These factors not only complicate but make ground surveys highly impractical.

On a localized basis, salvage logging has minimized small-scale beetle outbreaks. However, this control method has the same problems in locating infested trees as has chemical control.

Using past aerial survey records, a seven-year history of the three problem areas was compiled (Table 1). Data in the tables do not reflect the fact that new infestation centers are larger than those recorded for the past few years.

Table I. Occurrence of Douglas Fir Beetle Attacks, 1968 to 1974, Boise National Forest, Idaho.

	Year	<10 trees/group	>10 trees/group
SF Payette R., Lowman to Wapiti Cr.	1968	73	21
	1969	50	52
	1970	34	16
	1971	16	2
	1972	11	5
	1973	12	4
	1974	17	18*
Middle Fork Payette R., Lightning Cr., to Silver Cr.	1968	73	11
	1969	28	17
	1970	32	19
	1971	49	12
	1972	15	8
	1973	32	12
	1974	32	22
SF Boise R., Pine Area	1968	13	8
	1969	9	5
	1970	2	5
	1971	9	4
	1972	5	0
	1973	11	4
	1974	11	6

*Many groups in excess of 40 trees or more.

DISCUSSION

Douglas fir beetle outbreaks have been a chronic problem in high value, overmature Douglas fir stands. Controls are known; however, wide-scale use is impractical and uneconomical. Due to the expanse of mature, overmature Douglas fir stands on the Boise National Forest, the best course of action for minimizing beetle damage would be conversion of stands to a younger more viable condition.

Recently the use of helicopters has provided a tool for logging previously inoperable steep, rugged, terrain of moderate to high value Douglas fir. It is possible that helicopters could be used in the following manner to alleviate Douglas fir beetle losses along the South Fork of the Payette River.

RECOMMENDATIONS

1. Fell trees in April or May; remove them beginning about July 15. Take logs to mill for processing immediately upon removal from the woods.

2. If spring cutting is not practical, then log and remove trees as quickly as possible.

3. In any event, use B2.2 Specification of 2400-6 Contract to insure proper slash treatment.

1972. Parker, Douglas L., Status of Forest Insect and Disease Conditions and Programs in the Intermountain Region, In-Service Report, 12 pp.

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